

YEAR OF THE SOLAR SYSTEM

News from the Field

Spring 2012

The Year of the Solar System (YSS) — a synthesis of NASA's 50-year exploration history — provides an integrated picture of our new understanding of our solar system! YSS includes 20 topics that share thematic NASA solar system mission educational resources and activities (tied to the national science standards), and upcoming event opportunities!

YSS Resources

The materials for all the YSS topics, both upcoming and past, are now available online, including:

- **The Journey Begins**
- **Birth of Worlds** (solar system formation)
- **The Planets: A Family Affair** (composition and characteristics of the planets)
- **Small Bodies/Big Impacts** (comets)
- **Ancient Astronomers/ Modern Tools**
- **Water, Water, Everywhere!**
- **Volcanism!**
- **Impacts!**
- **Rocks in Space** (asteroids)
- **Windy Worlds** (atmospheres and climate)
- **Gravity: It's What Keeps Us Together**
- **Moons and Rings: Our Favorite Things**
- **Magnetospheres: Planetary Shields**
- **Evolving Worlds** (planetary evolution)
- **Far-Ranging Robots** (robotics)
- **Shadows of the Sun** (eclipses and transits)
- **Ice!**
- **New Data, New Ideas**
- **New Worlds, New Discoveries** (exoplanets)
- **Got Life?** (astrobiology)



Featured Story

Andrew Dennis is the Mentor Coordinator of the STARBASE 2.0 Club at the Museum of Aviation in Warner Robins, Georgia. He recently took his experiences from a NASA-supported Mars Science Laboratory workshop and mission launch in Florida back to his mentors, colleagues, and club members, where they thought it would be a great idea to build their robots in the image of the current Mars rover "Curiosity."

STARBASE 2.0 Club is an after-school program for middle-school students that mentors them in STEM education, team building, and goal setting. The club focuses one of their hands-on STEM activities on the building and programming of robots to accomplish a mission, which tied nicely into the recent NASA mission.

Thank you, Mr. Dennis, for sharing your story!

solarsystem.nasa.gov/yss/

YSS Mission News



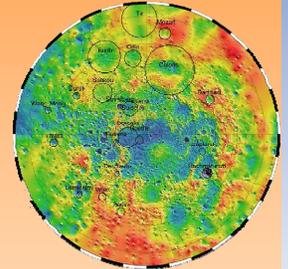
The **MESSENGER** mission discovered vast, smooth plains around Mercury's north pole that were created by volcanic activity more than 3.5 billion years ago. The lava flows were epic, covering 6% of Mercury's surface. MESSENGER has also observed many small bright depressions, or hollows, that are evidence of unexpected volatiles being lost to space, and MESSENGER scientists have learned that Mercury's core is 85% of its width, and very different from Earth's, with an iron sulfide outer core layer, a deeper liquid core layer, and possibly a solid inner core.

http://www.nasa.gov/mission_pages/messenger/media/PressConf20120321.html



The **Lunar Reconnaissance Orbiter** has seen signs that the Moon is still geologically active. Images show that the crust is being stretched, forming minute valleys in a few small areas on the lunar surface, as recently as 50 million years ago.

<http://lunarscience.nasa.gov/articles/nasa-spacecraft-reveals-recent-geological-activity-moon/>



The **Kepler** mission has found thousands of planet candidates and dozens of planets in its search for Earth-sized planets in the habitable zones around other stars.

<http://kepler.nasa.gov/news/newsaboutplanetfinding/>



Dawn is announcing new images and discoveries at the asteroid Vesta constantly. Areas in Vesta's southern hemisphere appear to be young — only 1 to 2 billion years old. Bright materials appear to have been exposed by impacts, and darker brown, gray, and red deposits may have formed from slow collisions with carbon-rich asteroids. There are grooves around Vesta's equator that appear to be related to the large craters at its south pole. <http://dawn.jpl.nasa.gov/news/>



The **Cassini** mission has discovered salty particles in a plume from Enceladus, suggesting that this ice-covered moon has liquid water with a composition similar to Earth's oceans!

http://solarsystem.nasa.gov/scitech/display.cfm?ST_ID=2473



Scientists have had mixed thoughts concerning some of the channels on Mars; while most look as though they were carved by running water, there has been some evidence that they may have been carved by lava. A new analysis of images from the **Mars Reconnaissance Orbiter** suggests that large amounts of water flooding these regions billions of years ago may have carved out outflow channels that were later altered and partially filled in by lava.

<http://www.universetoday.com/94367/did-water-or-lava-carve-the-outflow-channels-on-mars/>



Stay tuned for more discoveries as the exploration of our solar system continues!!

About the YSS

The Year of the Solar System is a 23-month celebration (a martian year) of our exploration of the solar system, ending in August 2012. NASA's diverse missions in this period create a rare opportunity to engage students, using NASA missions to reveal new worlds and new discoveries.

Send Your News

Do you have events or news for us to include in the next quarterly YSS newsletter? Send your information to us at <http://solarsystem.nasa.gov/yss/shareastory.cfm>

And don't forget to add your information to the YSS website!
Go to <http://solarsystem.nasa.gov/yss/getinvolved.cfm>

NASA Planetary Community

50th Anniversary of Solar System Exploration (SSE@50)



NASA looks to extend the successful “Year of the Solar System” observance with information/educational opportunities themed around the upcoming golden anniversary of solar system exploration (as defined by the first successful planetary mission, the *Mariner 2* flyby of Venus). Beginning in August 2012, SSE@50 will

include a centerpiece event, a History Symposium on the SSE@50 theme, to be conducted October 25–27, 2012, in Washington, DC. The overarching SSE@50 perspective will not only be historical, commemorating past accomplishments, but it will also be forward-looking, in the vein of “What discoveries might the next 50 years bring?”

Planning for SSE@50 events, programming, and web support is underway; input from the planetary science and E/PO communities is sought. Please visit <http://solarsystem.nasa.gov/50th> and contact Steven Williams (steven.williams@nasa.gov, 202-358-0615) with ideas.

YSS Webinars

Have you missed the Year of the Solar System webinars? These are recorded and available online for you to view at your leisure; check them out at <http://video.strategies.org/index.php?videoID=122#results>.

Upcoming Events!

The Transit of Venus will be June 5–6, 2012! Check out the activities and resources in the YSS site for June 2012, *Discovering New Worlds!*

Mars Science Laboratory and the Curiosity rover will land on Mars on August 5. Plan your own landing event! Activities and resources are available in the August 2012 topic, *Got Life?*

Be sure to add your public events to the Year of the Solar System events calendar, at <http://solarsystem.nasa.gov/feedback/index.cfm?FeedbackType=YSSCalendar>.

Opportunities for Educators

The Lunar Reconnaissance Orbiter’s education team is offering weeklong lunar workshops this summer for classroom teachers grades 6–12, at multiple locations!

<http://lunar.gsfc.nasa.gov/lwe/index.html>

Juno workshops for librarians and other informal educators are being held in the Mid-Atlantic region. The next workshop will be in West Virginia, September 20–21. <http://www.lpi.usra.edu/forum/education/viewforum.php?f=18&start=0>

Check out these Education and Public Outreach resources:

MESSENGER’s mission at Mercury: <http://messenger-education.org>

Mars missions: <http://mars.jpl.nasa.gov/participate/marsforeducators/>

Dawn’s mission to asteroids: <http://dawn.jpl.nasa.gov/education/>

Get Involved

All educators registering a program or event for the YSS calendar will be sent a packet of materials! Register your event now to receive:

- Four flyers (for advertising your program)
- A package of YSS bookmarks
- A package of YSS calendars
- A package of YSS tri-fold brochures
- Solar system lithograph sets
- Other miscellaneous NASA items as available

Go to <http://solarsystem.nasa.gov/yss/getinvolved.cfm>